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REMARKS

Claims 1-17 are pending in the present application. In the Office Action mailed April 16, 2003, the Examiner proffered six (6) different §102(b) rejections. The Examiner rejoined and examined all pending claims and rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Bernard et al. (USP 3,883,331). Claims 1, 7, and 13 were rejected under 35 U.S.C. §102(b) as being anticipated by Major et al. (USP 5,388,413). Claims 1, 3-5, 7, 9-11, 13-15, and 17 were rejected under 35 U.S.C. §102(b) as being anticipated by Caesar (USP 5,711,865). Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by Offer et al. (USP 5,981,897). Claims 1 and 3-5 were rejected under 35 U.S.C. §102(b) as being anticipated by Stol (USP 4,642,445). Claims 1 and 3-6 were rejected under 35 U.S.C. §102(b) as being anticipated by Patel et al. (USP 4,465,238). Applicant appreciates the indication of allowable subject matter of claims 8, 12, and 16.

Applicant acknowledges the Examiner's duty to perform a thorough search of the art as outlined in MPEP §904.01 and appreciates the thorough examination of this application; however, Applicant also wishes to remind the Examiner that it is also the Examiner's duty "to compare the references with one another and with the applicant's disclosure to avoid the citation of an unnecessary number" of references MPEP §904.03. Additionally, MPEP §904.03 states that "[t]he examiner is not called upon to cite *all* references that may be available, but only the "best." (37 CFR 1.104(c).) Multiplying references, any one of which is as good as, but no better than, the others, adds to the burden and cost of prosecution and should therefore be avoided." (emphasis in original).

The Examiner rejected claim 1 under 35 U.S.C §102(b) as being anticipated by Bernard et al. stating that "Bernard teaches a gas filter for preventing a shielding gas from introducing particles exceeding a predetermined size into undesired areas (col 1 line 58 – col 2 line 35 and col 5 lines 22-57)." The Examiner continues stating that "this filter may be used for anything including but not limited to air compressors, engines, households, and arc welding devices (col 5 lines 10-33) which conventionally use a shielding gas or plasma." Applicant respectfully disagrees.

Claim 1 calls for, in part, a gas filter comprising a housing having an inlet adapted to be connected to a gas cylinder and an outlet adapted to be connected to a gas solenoid valve. Applicant does not necessarily disagree that the filter of Bernard et al. is applicable to welding applications however, applicant does not agree that the filter of Bernard et al. is adapted to be

connected to a gas cylinder or a gas solenoid valve. It is apparent that the filter of Bernard et al. is a shop air filter and not a shielding gas filter.

Specifically, Bernard et al. states that "...efforts have been made in industry to cut down on the release into the factory building atmosphere of welding smoke by equipping welding guns with a vacuum smoke removal system." Col. 5, lns. 33-37. Bernard et al. further states that "a filter, according to the present invention, is very well suited for removing the solids from smoke drawn off from an arc-welding operation by a vacuum gun system. The filtered gases released from the filter after filtration may be **discharged directly into the building** ..." emphasis added, Col. 5, lns. 43-48. That is, the filter is applied to a path with an intake remote from the welder and an exhaust into a building. The filter is an air filter, not a shielding gas filter. The filter removes particulates and smoke generated from the welding process, not particulates that may be introduced to the welding process from a shielding gas cylinder. The Examiner also states that the filter of Bernard et al. is connectable to a number of devices including but not limited to a valve (figure 1 and col 6 lines 25-68). Applicant finds no support for the conclusion that the filter of Bernard et al. is connectable to a valve. Bernard et al. does disclose that the inlet is connectable to a separator but such is not a valve. The separator of Bernard et al. is a continuous path therethrough that allows for heavier particulates to be dropped from the flow via a tortuous path. Bernard et al. states that "the downward and then upward flow of gases through the sections of the separator 22 provides a dynamic separation of relatively large particles entrained in the gas flow, the particles being collected in the bottom of the separator." Col. 6, lns. 48-52. That is, the big pieces fall out of the flow. Such is not a valve, let alone a solenoid valve.

As such, Bernard et al. does not disclose a filter that has a housing having an inlet adapted to be connected to a gas cylinder or an outlet adapted to be connected to a gas solenoid valve. As such, claim 1 clearly defines the present invention over Bernard et al, the first of six (6) §102(b) references applied against claim 1.

The Examiner next rejected claims 1, 7, and 13 under 35 U.S.C. §102(b) as being anticipated by Major et al. stating that "nitrogen is supplied from a source such as a cylinder (tank, col 1 lines 22-24) through an inlet connected to a gas hose (conduit 14)." Major et al. teaches away from the use of a gas cylinder or tank as a means of providing shielding gas to a welding operation. That is, it is apparent from the background of the invention, when read in its entirety, not merely word searched, in addition to the title, that the invention of Major et al. is a portable nitrogen source that is intended to replace the need for gas cylinders. As such, nitrogen is not supplied from a gas cylinder but is generated by the nitrogen source at remote locations.

Major et al. also states that "a compressed air stream produced by compressor 10 flows through conduit 14 to enter and flow through after-cooler 16 in which the stream of compressed air is cooled by heat exchange with the ambient atmosphere." Col. 2, ln 66 through col. 3, ln. 2. In other words, it is not shielding gas that flows through conduit 14 but compressed air.

The Examiner further states that "the filter further comprises a housing (10) with filter retained in a passageway of the housing between the inlet and outlet (42) with a solenoid controlled by electrical signals between them (col 2 line 60 – col 3 line 42). Major et al. states that:

> The selective permeability membrane 51 of the walls of the hollow fibers within nitrogen module 50 generally constrain the nitrogen gas of the compressed air stream within the hollow fibers while allowing oxygen, moisture, carbon dioxide and other sweep gases to permeate through the membrane wall much more rapidly than the nitrogen. These sweep gasses are then expelled through module vent 52. Nitrogen gas thus flows through the fibers and from module 50, through conduit 54, restriction assembly 60 and conduit 72 to nitrogen port 74. The purity of the nitrogen gas arriving at port 74 will depend upon the back pressure provided by restrictor assembly 60, which determines the differential pressure over the fiber walls and the dwell time of the gas stream within the module.
> Col. 3, lns. 43-57.

That is, the filter of Major et al. removes unwanted components of compressed air to generate nitrogen shielding gas. As best shown in Fig. 1 of Major et al., the nitrogen gas generated by the device of Major et al. does not pass through the filter. That is, the filter, being a semi-permeable membrane, allows for the passage of the unwanted components therethrough. The nitrogen gas exits the filter through conduit 54. Conduit 54 is on the same side of membrane 51 as inlet conduit 46. As such, nitrogen gas does not pass through the filter, rather the unwanted gases pass therethrough. As such, membrane 51 does not filter the nitrogen gas.

Claim 1 calls for, in part, a housing having a passageway extending between an inlet and an outlet adapted to be connected to a gas solenoid valve and a filter screen located in the passageway. As discussed above, the filter of Major et al. prevents the passage of nitrogen through the membrane. The outlet from module 50, on an opposite side of the membrane 51 is a vent 52. The discharge from vent 52 is the byproducts generated from the nitrogen extraction and as such, would not be suitable for welding applications. As such, claim 1, and those claims that depend therefrom are patentably distinct over Major et al.

Claim 7, in addition to the arguments above related to the location of the filter, also calls for, in part, a filter located between a gas solenoid valve and a hose connected to a gas cylinder.

This was done, in part, to explicitly define over the exact types of general "filters" being applied by the Examiner. As previously stated, the invention of Major et al. is intended as an alternative to gas cylinders. Additionally, the filter does not have an outlet that is connectable to a solenoid valve. Conduit 54 provides for passage of nitrogen gas to restrictor assembly 60. Major et al. states that "an operator may chose between two nitrogen flow rates and corresponding purities by placing selector valve 70 in the appropriate position." Col. 4, lns. 7-10. As such, selector valve 70 is not a solenoid valve but is manually operable valve. Major et al. does disclose an electronically controlled valve 28 but such does not control the flow of shielding gas. See Col. 3, lns. 3-17. Valve 28 provides a drain for water collected from coalescer 20 which removes excess water from the compressed air. As such, valve 28 is not a gas solenoid valve. Therefore, claim 7 and those claims that depend therefrom are patentably distinct over Major et al.

Claim 13 calls for, in part, that **all of the gas** from the gas supply passes through the shielding gas filter before entering the solenoid valve. As stated above, the shielding gas of Major et al. does not pass through the filter nor does the shielding gas pass from the filter to a solenoid valve. Therefore, claim 13, and those claims that depend therefrom are patentably distinct over Major et al.

The Examiner next rejected claims 1, 3-5, 7, 9-11, 13-15, and 17 under 35 U.S.C. §102(b) as being anticipated by Caesar stating that Caesar teaches "a gas filter in a gas-producing device for preventing a gas from introducing particles (water or moisture) exceeding a predetermined size into a solenoid valve (abstract)." The Examiner states further that "...the filter comprises a housing (11) with a stainless steel screen (33) for removing particles down to 0.3 microns retained in a passage way of the housing...", however, Caesar states that "...distilled water supply supplies water to the apparatus via a pressure sensor 31 and solenoid valve 32 under microprocessor control through a primary stainless steel filter 33 that removes particulate impurities down to 0.3 of a micron." Col. 6, lns. 26-29. As such, filter 33 is not a gas filter but is a water filter and as such, the filter 33 is not adapted to be connected to a gas cylinder or to a gas solenoid valve as specifically called for in claim 1.

As stated above, claim 1 calls for, in part, a housing having an inlet adapted to be connected to a gas cylinder and an outlet adapted to be connected to a gas solenoid valve and a filter screen retained in the housing. Applicant does not necessarily disagree that Caesar shows a housing having a gas filter therein, however, Applicant does not agree that any of these filters are adapted to be connected to a gas cylinder and a gas solenoid valve. Caesar states that:

> The gas outlets from each of the five cell, passes into a pooling manifold 42 via individual solenoid valves 43. From the manifold 42, the gas is then fed to a wash tank 48 providing a headspace of gas therein. By taking the gas through pipes to the bottom of the wash tank 48 the gas is water scrubbed which provides for both a flashback arrest and removal of entrained electrolyte. The gas is removed from the water tank via a stainless steel manifold 44 including a back pressure controller 49 under microprocessor control. From the twin outlets of the manifold 44 the gas is passed to a double headed vacuum pump 47 which draws the gas through a first filter 45 including a drain line adapted to return liquid contaminants, mostly water, to the wash tank 48 via valve 46, and a secondary filter 50 of the Cuno type for residual moisture removal. This removes moisture to 0.3 of a micron. After she pump 47 the gas passes into a flashback arrester 51 filled with woven 316 Stainless mesh and 25 cm of water. The gas enters the flashback arrester under the water level. The gas then travels in two lines to a moisture removing filter 52 of the Cuno type, whereafter it enters delivery pumps 53 which pressurises the gas to 36 psi for delivery via intermediate solenoid valves 54, an outlet manifold 55 having a pressure regulatory function, and final solenoid valves 58 which control delivery to an electronically monitored outlet flashback arrester 56.
> Col. 6, ln. 50 to Col. 7, ln. 8.

As shown in Fig. 4, the first filter (45), which filters fluid from the gas, has an inlet adapted to be connected to a wash tank (48), a first outlet adapted to be connected to a secondary filter (50), and a second outlet adapted to be connected to a water drain valve (46). Second filter (50) has an inlet adapted to be connected to the first filter (45), a first outlet adapted to be connected to a vacuum pump (47), and a second outlet adapted to be connected to a water drain valve (46). As such, neither of the first nor second filters is adapted to be connected to a gas cylinder and a gas solenoid valve. The gas is discharged from the vacuum pump (47) into a flashback arrester (51). Flashback arrester 51 has an inlet that is adapted to be connected to a vacuum pump (47) and an outlet that is adapted to be connected to a moisture removing filter (52). Moisture removing filter (52) has a first outlet adapted to be connected to a delivery pump (53) and a second outlet adapted to be connected to a pressure sensor (61). Although second outlet is shown as having a pump downstream of the solenoid valve, Caesar states that the delivery pumps (53) pressurize the gas to 36 psi via intermediate solenoid valves (54). This being the case, the outlets from the moisture removing filter are adapted to be connected to a pump or a pressure sensor, not a gas solenoid valve. As such, none of the gas filters of Caesar have an inlet adapted to be connected to a gas cylinder and an outlet adapted to be connected to a gas solenoid valve. Therefore, claims 1, and those claims that depend therefrom, are patentably distinct over Caesar.

Claim 7 calls for, in part, a cylinder containing a quantity of shielding gas and a shielding gas filter having an outlet connected to the inlet of a gas solenoid valve and an inlet connected indirectly to the gas cylinder. In addition to the argument provided above related to the construction and location of the filter relative to the gas cylinder and the gas solenoid valve, the gas of Caesar is not a shielding gas. The electrolytic gas producer method and apparatus of Caesar produces a mixture of hydrogen and oxygen. Such a mixture, because of the highly reactive nature of the constituents, is not a shielding gas. The mixture may be used for cutting and welding applications when the mixture is burned but the mixture is not a shielding gas. Additionally, the function of a shielding gas is to prevent exposure of a welding process to an atmosphere heavy in hydrogen and oxygen as these chemicals can adversely affect the quality of a weld produced under such conditions. For all the reasons above, that which is called for in claim 7 is not shown in Caesar. As such, claim 7, and those claims that depend therefrom, are patentably distinct over Caesar.

Claim 13 explicitly recites the step of providing a shielding gas filter in a shielding gas delivery system. As discussed above, the invention of Caesar does not provide, create, generate, or apply a shielding gas or a shielding gas filter. Therefore, claim 13, and those claims that depend therefrom are patentable over Caesar.

The Examiner next rejected claims 1-3 under yet another 35 U.S.C. §102(b) reference — Offer et al., stating that "Offer teaches a gas filter capable of preventing a shielding gas from introducing particles exceeding a predetermined size into undesired areas and thereby reducing contamination..." Applicant disagrees.

Again, claim 1 calls for, in part, a housing having an inlet adapted to be connected to a gas cylinder and an outlet adapted to be connected to a gas solenoid valve. Offer et al. states that:

> The present invention is an apparatus for emitting a laminar flow of inert gas at a location inside a reduced-width, high-aspect-ratio (ratio of depth to width) weld groove. The portion of the gas distribution apparatus extending into the groove has a thickness less than the width of the weld groove and is located to distribute inert gas which displaces the ambient atmosphere overlying the molten pool area at the bottom of the weld groove, thereby preventing contamination of the molten weld material. Gas diffusing means are incorporated in the distal end of the gas distribution apparatus.
> Col. 2, lns. 44-49.

The diffuser of Offer et al. is located inside a welding groove and as such does not have an outlet that is adapted to be connected to a solenoid valve. The diffuser of Offer et al. is attached to the

torch of a welding power supply. It is not disclosed that the diffuser filters anything from the flow therethrough. It is not the diffuser that prevents introduction of pollutants into the welding pool, rather it is the presence of the inert gas thereabout. As such, the diffuser does not remove particulates from the shielding gas and the diffuser is not adapted to be connected to a solenoid valve.

The Examiner's interpretation that the diffuser of Offer et al. is adaptable to be connected to a valve eviscerates the novelty contained therein. That is, Offer et al. is intended to provide a diffused shielding gas to a weld such that the weld is effectively protected from atmospheric conditions. Directing the output of the diffuser into a solenoid valve prevents such a delivery. Additionally, Offer et al. states that "a primary portion or all of the welding gas may be fed directly to the lower portion of the joint through the gas lance, which may comprise a multiplicity of gas distribution tubes 28, each tube having a non-porous section 28a which acts as a conduit and a porous section 28b which acts as only a diffuser if the distal end is closed." emphasis added. Col. 8, lns. 26-31. That is, the device of Offer et al. is a diffuser located at a torch, not a filter within a housing having an output adapted to be connected to solenoid valve. Therefore, claim 1, and those claims that depend therefrom are patentably distinct over Offer et al.

The Examiner next rejected claims 1 and 3-5 under 35 U.S.C. §102(b) as being anticipated by Stol stating that "Stol teaches a gas filter capable of preventing a shielding gas from introducing particles exceeding a predetermined size into undesired areas and thereby reducing contamination (smoke removal, claim 16, col 2 lines 1-4, and col 4 lines 24-32)" Applicant respectfully disagrees.

Stol states that "A stack of filter screens 351 comprises the shield's gas lens. This bank of gas diffusing screens acts to provide a cross-sectionally uniform flow of gas and a laminar-like flow pattern of the outcoming shielding gas toward the substrate 325." Col. 5, lns. 2-7. That is, the filter material is used to generate a uniform flow in the vicinity of the welding torch. Again, similar to the Examiner's interpretation of Offer et al., adapting the housing of Stol to be connected to a solenoid valve would render the diffuser pointless.

Stol further states that "...a second chamber disposed about a perimeter defined by said first chamber and defining therein a negative pressure region for the removal of smoke or the like resulting from the metal processing operation." Col. 2, lns. 1-4. That is, it is not the diffusing filter material that removes particulates but the vacuum pressure generated about a periphery of the metal processing operation. Additionally, this filtration system filters the exhaust gases generated by the welding process, not the shielding gas supplied thereto. Stol also states that "the

diffuser screens 351 are designed to be replaced periodically. Occasional melting by secondary and/or stray laser beams or arcing, spatter and smoke accumulation may lead to eventual degradation of their functionality due to excessive pore clogging." Col. 5, lns. 14-19. It would be impractical to adapt the output of shielding gas through the diffuser of Stol to a solenoid valve. As such, that which is called for in claim 1 is patentably distinct over Stol.

The Examiner lastly rejected claims 1 and 3-6 under 35 U.S.C. §102(b) as being anticipated by Patel et al. stating that "Patel teaches a gas filter capable of preventing a shielding gas from introducing particles exceeding a predetermined size into undesired areas and thereby reducing contamination (smoke removal, claim 16, col 2 lines 1-4 and col 4 lines 24-32)." Applicant notes that the Examiner's statement is verbatim, other than the Patentee's name, to the first sentence used in the rejection based on Stol. Additionally, Patel et al. does not have a claim 16. As such, any subsequent action in this matter must be non-final to allow applicant the opportunity to respond to a properly supported rejection. Applicant offers the following remarks in response to the balance of the Examiner's rejection based on Stol. The Examiner states that "the inlet and outlet are capable of being attached to a gas cylinder and a variety of fittings (figures 1-3 and 7)." Applicant respectfully disagrees.

Claim 1 calls for, in part, a housing having an inlet adapted to be connected to a gas cylinder and an outlet adapted to be connected to a gas solenoid valve. Patel et al. states "that particulate-laden air entering the nozzle 12 from the conduit 10 flows into the annular space 22, passes through the outer screen 40 which removes the particulate matter, and then passes through the permeable inner screen 30 into the passageway 32. The filtered air flows through the passageway 32 and is exhausted into the drying booth through the open end 42 of the passageway 32 and the exhaust opening 20 of the nozzle 12." Col. 5, lns. 55-63. Patel et al. further states that the "invention is particularly useful with the hot air nozzles in automobile paint drying ovens. A distribution conduit is used to supply hot air to a drying booth. The booth has a plurality of nozzles connected to the conduit for exhausting the hot air into the booth." Col. 4, lns. 33-37. As shown in Fig. 1 of Patel et al., the filter 18 is located in the nozzle 12 which is a part of the distribution conduit 10. Assuming arguendo that the nozzle is in fact "a housing", its input is only adapted to be connected to a distribution conduit as the two are connected. As Patel et al. states, "the booth has a plurality of nozzles connected to the conduit." emphasis added, Col. 4, lns. 34-36. As such, the housing of Patel et al. does not have an inlet adapted to be connected to a gas cylinder. The outlet from the nozzle of Patel et al. is disclosed as "an open end 42". Such is

not adapted to be connected to a gas solenoid valve. As such, claim 1, and those claims that depend therefrom are patentably distinct over Patel et al.

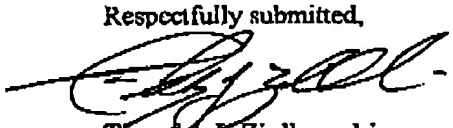
New claims 18-27 are also presented herein. Claims 18, 19, and 20 depend from claims 1, 7, and 13, respectively, and further define the filter of the respective claims as being incorporated into a welding-type device. Claims 21-27 further define the present invention and are believed patentable over the art of record.

Therefore, in light of the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-27.

A credit card authorization in the amount of $264.00 is also enclosed for any fees associated with entering the claims newly presented herein.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



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